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ABSTRACT

Research on school effects has shown that differences within schools have more influence on educational outcomes than do differences between schools. This chapter explores the implications for educational equity of ability grouping. Concerns about equity are organized by placing them in the context of the meaning of educational equity that implies equality of results across population subgroups, and equality of access with respect to the population as a whole. Research on the effects of grouping and tracking reveals that ability grouping in particular seems to affect equity. At the elementary school level, it leads to greater inequality of results, but may occur in concert with higher achievement at all ranks. In secondary schools ability grouping seems to have the most severe consequences for inequality. Future research might evaluate the likelihood of effective instruction in low-track classes along with the prospects for maintaining high achievement for the strongest students with the use of cooperative learning in heterogeneous classes. (73 references) (MLF)

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INSTRUCTIONAL ORGANIZATION AND EDUCATIONAL EQUITY

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INSTRUCTIONAL ORGANIZATION AND EDUCATIONAL EQUITY

If there is one thing we have learned from research on school effects, it is that differences within schools have more influence on educational outcomes than do differences between schools (e.g., Coleman et al., 1966; Jencks et al., 1972; for reviews, see Averch et al., 1972; and Hanushek, 1986). Student achievement, to take the prime example, varies much more within schools than between; consequently we are more likely to discover the causes of variation in achievement if we examine differences within schools. Although a substantial portion of the within-school variation in achievement has been attributed to background differences between students, a growing literature suggests that differences in the experiences students have in schools also play an important role (e.g., Heyns, 1974; Barr and Dreeben, 1983; Dreeben and Gamoran, 1986; Gamoran, 1986, 1987; Oakes, 1985).

These findings have great importance for one who is interested in educational equity. They indicate that questions of equity need to be addressed by examining differences in what happens to students inside schools. How are students arranged for instruction? How is is the organization of instruction related to instructional processes? What are the connections between instructional organization, teaching practices, and student outcomes? These questions are fundamental to the study of equity in school systems because they pertain to the level of analysis at which student inequality is most evident: within schools.

This chapter explores the implications for educational equity of a key feature of the arrangement of pupils for instruction: the assignment of students to instructional settings according to their

perceived interests and abilities, a practice known as curriculum tracking or ability grouping. Writers on ability grouping, especially those critical of it, have often been concerned with equity. The present study attempts to organize these concerns by placing them in the context of a more general discussion of the meaning of educational equity. It then assesses the impact of ability grouping on equity, both as it is currently practiced and as it may potentially be implemented. This assessment is furthered by comparing ability grouping to other forms of instructional organization. Finally, the chapter presents some considerations for educators who must choose among competing values offered by different ways of arranging students.

Equity as a Value in Education

Equity in education, or "equality of educational opportunity," is a concept with multiple meanings. For the first two-thirds of this century, it referred to equal access to education. In the late 1960s, however, it became clear that equality of access mattered little when students' experiences outside school limited their capacity to profit from such access. What mattered instead was equality of results (Coleman et al., 1966; Coleman, 1968).

The frame of reference for defining equity is not self-evident. Whose results are supposed to be equalized? According to one view, equality of results exists when all students obtain similar outcomes (see Gutmann, 1987).[1] In this perspective, the goal of equity requires that education be used to overcome any pre-existing differences among students (not just differences tied to common bases of social inequality such as gender, race, and socioeconomic

status). As Gutmann (1987) and Strike (1988) pointed out, this view ultimately leads to a situation in which all resources are devoted to the least able students, at least until they reach the same level of achievement as their more able peers. This notion seems defensible only if one accepts the underlying assumption that all persons are capable of and have the right to similar attainment, and that neither ability, nor effort, nor any other difference among persons provides reason to differentiate opportunities or expectations. Because of this assumption, the position must be viewed as extreme, and it is certainly not a majority view in the United States.

More commonly, equality of results refers to equality across subgroups of society, such as males and females, blacks and whites, and rich and poor (e.g., Coleman, 1968). The assumption standing behind this view is that educational results should be unrelated to characteristics that are in principle irrelevant for education, such as sex, race, and economic standing (Strike, 1988). In contrast to the previous view, this approch accepts the validity of native ability and effort for influencing outcomes. Thus, according to this view, educational results may vary according to certain characteristics--those deemed, in Strike's (1988) term, "morally relevant" to the educational process--but not according to "morally irrelevant" ones.

It should be clear, however, that as soon as one permits unequal results within certain collections of students--for example, among students of equivalent backgrounds who differ in intellegence or effort--it becomes necessary to reintroduce the concept of equality of <u>access</u>. A notion of equity requires that even if

unequal results are allowable under certain conditions, all students have a right to equal access to effective educational resources. Thus the conception of equity for this chapter has two components, depending on the frame of reference: it implies equality of results across population subgroups; and it calls for equality of access (or "opportunity," in the earlier sense of the word) with respect to the population as a whole.

Equity is of course only one of many goals or values in education. Even if we restrict our focus to achievement outcomes, other goals include raising average scores; increasing the attainment of the highest-achieving students; and improving the efficiency of schooling (obtaining the highest level of outcome per resource input). It is unlikely that any decision about how to allocate educational resources will satisfy all of them.

Writers on ability grouping have tended to differ in the attention they pay to these competing values. Often, critics of grouping emphasize inequality of results, both among population subgroups and in the general population (e.g., Rosenbaum, 1976; Oakes, 1985). Proponents, in contrast, point out that ability grouping is supposed to increase achievement on the average, or for the highest-achieving students; and while they may be committed to equality of access, they have little concern for equality of results (e.g., Coxe, 1936; Conant, 1967). Even if these authors were to agree about what impact ability grouping has, they might still disagree about its appropriateness because they are concerned with divergent ends.

In reviewing the effects of grouping and tracking, I will call attention to both sorts of goals: the effects of grouping on the

levels of outcomes, which may be termed "educational productivity," and effects on the dispersion of outcomes, or "educational inequality" (Gamoran and Mare, 1989). The two types of results are connected: if ability grouping has no effects on productivity, then it can have none on inequality. Moreover, the direction of differences in levels of results for subgroups determines the dispersion of outcomes across such groups. For example, if grouping raises achievement for students from wealthy backgrounds (who have higher achievement to begin with), but lowers it for children of the poor, then it must also increase inequality between advantaged and disadvantaged students.

My own goal in describing the effects of instructional arrangements and discussing their implications for equity is not to argue for or against a particular value, but to show what values are served by current and theoretically possible practices. I hope to provide evidence that will help educators make informed choices given their own value preferences. Some choices may be easy--if one form of organization produced the highest means, the lowest variance, and with the greatest efficiency, it would be a unanimous choice. Unfortunately the real world is more complex than that, and emphasis on one goal may limit the attainment of another.

The Effects of Ability Grouping and Curriculum Tracking

Despite their widespread use, for at least two decades grouping and tracking have been under attack as being unnecessarily inegalitarian (e.g., Heathers, 1969; Rist, 1970; Findley and Bryan, 1971; Schafer and Olexa, 1971; Esposito, 1973; Rosenbaum, 1976, 1980; Oakes, 1985).[2] A review of the studies upon which this critical

stance is based shows that it is well-founded in certain ways, but that it does not hold unambiguously. The ambiguity stems from the fact that whether a given finding is judged as equitable sometimes depends on the definition of equity that is applied. Furthermore, different forms of ability grouping and different levels of the school system reveal different implications for equity.

Ability Grouping in Elementary Schools

At the elementary school level, there is convincing evidence that ability grouping increases inequality of results in the general population. That is, pupils who begin the school year with different achievement levels end up even farther apart at the end of the year, partly as a result of ability grouping. Studies describing this result have been reviewed by Esposito (1973), Good and Marshall (1984), and Slavin (1987). Perhaps the most direct evidence on this issue comes from Hallinan and Sørensen (1983; 1986), who showed that during the course of a school year, the variance in reading and math achievement increases most in classes containing homogeneous ability groups. This occurs because even after controlling for ability and background differences, students in high groups gain more than their low-group counterparts (Gamoran, 1986; Sørensen and Hallinan, 1986).

This finding may or may not indicate inequity, depending on one's definition. In the most extreme version, it would be considered inequitable purely because it involves unequal outcomes. Viewed by less severe standards, however, the finding does not provide enough information to judge it by. What happens to the mean outcomes of students in different groups? Does the gap widen

because high-group students are pushed forward, or because low-group students are held back, or some combination? Second, what are the mechanisms that lead to the unequal results? Do high-group students have access to better resources, such as more interesting texts and more instructional time? Or do high-group students profit more from the resources to which they are exposed?

With regard to mean outcomes, several reviews concluded that ability grouping sometimes raises achievement for high-group students, but that it has little impact for students in average groups, and may be detrimental to achievement for low-group students (Heathers, 1969; Findley and Bryan, 1971; Esposito, 1973; Good and Marshall, 1984). Recently, however, Slavin (1987) has challenged this view, arguing that earlier reviews distorted the evidence by failing to consider different forms of ability grouping separately. Using "best-evidence synthesis," a technique that combines quantitative meta-analysis with traditional narrative review, Slavin shows that whereas assignment to ability-grouped classes for the entire school day has no overall consistent effect on achievement, two other forms of grouping do: within-class grouping, and regrouping for specific subjects (especially when students are regrouped across grades) lead to higher achievement on the average. Moreover, the studies reviewed by Slavin indicate that the achievement advantage generally occurs at all group levels--in average and low groups as well as in high.

Of the studies that provided separate results for the different group levels, some showed the highest gains in low groups. More often, though, while students in all groups gained, high group

students recorded the highest gains. This finding is consistent with studies comparing achievement in high and low groups that observed a widening gap between the two over the course of the year (Gamoran, 1986; Sørensen and Hallinan, 1986). If it is true--and it has not been accepted without controversy (Hiebert, 1987)--then it indicates that although ability grouping in elementary schools leads to greater inequality of achievement, it also produces higher average achievement for students at all ability levels.[3] Educational decision-makers are thus faced with a choice between competing values: equality of achievement or higher levels of achievement.

Our earlier discussion of equity led to the conclusion that if inequality of results occurs in the general population, it should be considered inequitable if it derives from unequal access to valued resources. In light of the higher gains for high-group students, it is important to examine equality of access for students in different groups. Unfortunately the evidence is somewhat equivocal. One of the clearest findings on this topic is that in grouping for reading, the faster gains of high-group students result from greater coverage of the curricular material (Barr and Dreeben, 1983; Rowan and Miracle, 1983; Gamoran, 1986). What these studies do not show, however, is whether the faster pace of instruction in high groups is appropriate or not. Presumably, low groups cover less material in order to allow students to master what they do cover; it is not known whether the slower pace is at students' capacity, or below it. Thus it is not clear whether the unequal access to content coverage should be considered inequitable.

Other studies show mixed findings on the quality of teaching in varied ability groups. In reading, low groups are characterized by

more interruptions and fewer opportunities to read and discuss stories (Eder, 1981; for a review see Hiebert, 1983). At the extreme, Rist (1970) described a class in which the low group was practically ignored by the teacher. However, another case study found more praise given to low group students, and that the smaller size of low groups allowed more time per student with the teacher (Weinstein, 1976).

Rist's (1970) case suggested bias against poor children in assignment to ability groups. However, this finding appears to be atypical. Studies examining multiple classrooms have failed to uncover significant effects of race or socioeconomic status on ability-group assignment after taking prior achievement into account (Haller and Davis, 1980; Sørensen and Hallinan, 1984; Haller, 1986; Gamoran, 1989). Still, group assignment is correlated with background variables because of the association between background and test scores. Despite equality of access to groups, then, ability grouping may increase inequality between advantaged and disadvantaged students because high-group students gain at a faster rate. On this issue, too, one is faced with a value choice, because the higher achievement from ability grouping may also produce greater inequality of results between population subgroups.

Grouping and Tracking in Secondary Schools

Research at the secondary level suggests that as in elementary schools, grouping and tracking tend to increase the dispersion of achievement by widening the gap between high and low achievers. Although this point has been debated (Jencks and Brown, 1975; Alexander and Cook, 1982), recent studies with large national data

sets show that students in high groups and college-preparatory programs gain more than their non-college-bound peers (Kerckhoff, 1986; Gamoran, 1987; Gamoran and Mare, 1989; Vanfossen, Jones, and Spade, 1987; Shavit and Featherman, 1988; see Gamoran and Berends, 1987 for a review). In contrast to the evidence for elementary schools, though, these studies give no indication that gains occur at all ability levels in comparison to heterogeneous grouping. In a study of British schools, Kerckhoff (1986) compared achievement in different "streams" of stratified schools to one another and to achievement of similar students in undifferentiated schools. His findings showed, first, that high- and low-group students tended to move farther apart over time, as I noted above; and second, that high-group students learned more, and low-group students less, than similar students in heterogeneous settings. In other words, grouping appeared beneficial to students in high groups, roughly neutral to middle-group students, and detrimental to the achievement of students in the lower ranks. Consistent with Kerckhoff's findings, a simulation conducted by Gamoran and Mare (1989) with U.S. data suggested that students assigned to non-college programs would have had higher achievement had they enrolled in the academic track.

Unlike at the elementary level, these unequal results in the general population cannot be defended with the argument that they occur in the context of raising achievement at all ability levels. Gains in high tracks are offset by low-track losses, and overall average achievement is barely higher, if at all (Kulik and Kulik, 1982; Kerckhoff, 1986). The goal of equity is not served here,

although the competing value of high achievement for the most promising students may be accomplished.

Does the inequality of results stem from unequal access? A large number of observational studies suggests that in secondary schools, this may be the case. Students in higher tracks are exposed to more interesting and more complex material at a faster pace; their teachers are more enthusiastic, spend more time preparing for class, and place more emphasis on discussing the meaning of concepts and less on memorization (Keddie, 1971; Rosenbaum, 1976; Metz, 1978; Ball, 1981; Oakes, 1985). Instruction in low-track classes is more likely to be fragmented and skill-based, relying on drills and worksheets (Hargreaves, 1967; Metz, 1978; Oakes, 1985; Page, 1987). More critical thinking and more exposure to culturally-valued knowledge (e.g., high-status literature) occurs in high-track classes (Ball, 1981; Oakes, 1985). Teachers judged more successful are more likely to be assigned to teach high-track classes (Lacey, 1970; Ball, 1981; Finley, 1984).

Although some instructional differences may be appropriate--for example, students with better reading skills may be able to read more books--the weight of the evidence clearly shows inequities between tracks in the quality of instruction. Although quantitative studies have yet to document the effects of instructional quality on achievement, the data strongly suggest that at least part of the reason for inequality of results in the general population is inequality of access across different tracks.

To compare results for population subgroups, it is first necessary to consider the track assignment process. Although placement appears largely meritocratic--that is, based on prior

academic performance--student socioeconomic characteristics also influence track assignment (Heyns, 1974; Alexander and McDill, 1976; Alexander and Cook, 1982; Rehberg and Rosenthal, 1978; Gamoran and Mare, 1989). The effect of SES probably occurs through a combination of different aspirations held by students and varied expectations on the part of school staff (Cicourel and Kitsuse, 1963). This effect means that through track assignment, the achievement advantage of students from high-SES backgrounds increases over time.

At the same time, controlling for SES and prior achievement, black students are more likely than whites to enroll in a college-preparatory program (Alexander, Cook, and McDill, 1978; Alexander and Cook, 1982; Rosenbaum, 1980; Gamoran and Mare, 1989). By examining track assignment and track outcomes simultaneously, Gamoran and Mare (1989) showed that the favorable assignment pattern for blacks meant that tracking helped to compensate for the initial advantage of whites over blacks in mathematics achievement. Because they were more likely to enroll in the academic program (net of background and prior achievement), blacks' achievement became closer to that of whites than it would have in the absence of tracking."

Gamoran and Mare (1989) found the same results for a comparison of males and females. That is, females were more likely to be assigned to the college track, so on the average their math achievement deficit became smaller than it would have in the absence of tracking. This finding is less secure than the one for race differences, however, because whereas several studies have shown a net advantage for blacks in the track assignment process, this was the first one to find a significant advantage for females (compare,

e.g., Alexander and Eckland, 1975; Alexander and Cook, 1982; Rosenbaum, 1980).

These equity-producing aspects of tracking must be seen in light of the overall effects, which clearly operate in an inequitable fashion. Although average achievement may not be harmed by tracking--and the average achievement of blacks appears to benefit--these averages are maintained through an overall inequality of results in the general population, which probably derives from inequality in the distribution of instructional quality between tracks.

Limitations on Equity: Comparisons Among Forms of Instructional Organization

The evidence reviewed here suggests that grouping and tracking, as they are currently practiced, contribute to an increase in the variance of student achievement. This finding is particularly troublesome at the secondary level, because high school tracking does not appear to raise achievement much in the population as a whole, nor does it provide equal access to the types of experiences that are likely to contribute to high achievement. Does this circumstance follow inevitably from the differentiation of students in schools? Or can the conditions of grouping and tracking be manipulated in order to remove or mitigate the resulting inequities?

One way of addressing this question is to consider why the impact of grouping on inequality is most severe at the secondary level. At least two conditions seem implicated. First, the forms of grouping appear to differ across levels of the school system. The prototypical form at the high school level is tracking, a system in which students are divided into distinct programs that dictate

most or all of their courses. The form of elementary school grouping that is most like tracking--ability-based class assignment for the entire day--is the one type that clearly did not result in achievement gains in Slavin's (1987) review. Slavin offers two reasons for the poor performance of this type of grouping, which may also apply to tracking in high schools: (a) because students are divided for all subjects at once, the classes are not really homogeneous for any one subject, thus minimizing whatever advantages accrue to ability grouping; and (b) because the divisions have such wide scope, they are especially salient, which probably magnifies grouping's negative psychological consequences for students in low groups. If more flexible grouping systems were adopted in high schools, the achievement gap between tracks might be lessened. This possibility is consistent with Gamoran's (1988) finding that high schools with more mobility in their tracking systems exhibit smaller achievement differences between tracks. Moreover, evidence from interviews suggest that high schools are moving toward less extensive tracking systems, at least formally (Oakes, 1985; Moore and Davenport, 1989).

A second reason for the large degree of inequality in high school tracking may be that the difficulties of providing high quality instruction to low-track classes are greater at the secondary level. In elementary schools, students are relatively pliant, more willing to follow the teacher's lead. In middle and high schools, students take a more active role in resisting the teacher's demands. If we think of instruction not as what teachers do to students, but as what teachers and students do together (Nystrand and Gamoran, 1988), then students' unwillingness to

perform may limit the quality of the instruction they receive. Observational evidence suggests that low-track students discourage teachers from challenging them. They prefer structured written work, finding it more comfortable and more private than brisk oral discussions (Metz, 1978). Yet this kind of worksheet-based instruction is exactly the fragmented, simplified work that is said to heighten inequality of results. A similar point is made by Willis (1977) in reference to class reproduction (rather than tracking): working-class adolescents actively participate in creating their own inequalities of opportunities. Thus while it may be theoretically possible to provide instruction of equal quality to students in all track levels, this strategy may be difficult to implement.

Ability grouping appears to greatly increase inequality when it is used to provide challenging instruction to high groups but slow-paced, fragmented work to low groups. Its impact on inequality may be considerably smaller when it is used to provide appropriate instruction to the various levels, as may occur in elementary schools. Thus, the impact of ability grouping on equity depend to a significant extent on how grouping is implemented. Much the same can be said for heterogeneous grouping. There are many ways of organizing a mixed-ability class, and the different arrangements vary in their implications for equity.

For instance, one can imagine using heterogeneous grouping to reduce variance in achievement with a tightly regulated curriculum in which new concepts are not introduced until all students have fully mastered the previous ones. In such a system, the class would be taught as a whole, and the most capable students would not be

allowed to proceed until all were ready. This example seems extreme, but it may not be far from current practice. A comparison of the math curriculum in the United States with that of other countries shows that American classes spend far more time on review than others, so that knowledge introduced each year consititutes a minimal advance over the previous one (McKnight et al., 1987). This "spiral curriculum" is said to account in part for the dismal math performance of American children in international comparisons.

More generally, some writers suggest that teachers typically attend to a "steering group" of students at about the thirtieth percentile of the class (Dahllof, 1971; Barr and Dreeben, 1977). The teacher introduces new concepts when students at this level are prepared to move on. Burns' (1987) study of eight grade mathematics instruction suggested that teachers did teach to a steering group; moreover this technique had a "leveling effect": students whose inital performance was high failed to gain as much as similar students in a comparison group who paced their own instruction. Whole class, mixed ability grouping does appear to produce greater equality of results, but lower achievement overall, particularly for students at the top of the achievement distribution. This conclusion is of course the converse of the findings for ability grouping discussed earlier.[5]

Individualized instruction is another way of using mixed-ability classroom organization. In theory it allows each student to maximize his or her achievement by pacing instruction to each one's level. Used successfully, this approach would be likely to result in a high degree of inequality of results, given the diversity of academic and socioeconomic backgrounds with which

students arrive at school. Indeed it is probably only because it is used less widely that individualized instruction's potential for unequal results has received less attention than that applied to ability grouping. In any case, reviews have concluded that individualized instruction is no more effective than whole-class instruction in raising achievement, probably because of classroom and curriculum management difficulties (Miller, 1976; Schoen, 1976; Bangert, Kulik, and Kulik, 1982).

Besides whole-class and individualized instruction, cooperative learning is a third way of arranging heterogeneous classes. This technique has several variants, but most involve placing students in small, mixed-ability groups within the class and then assigning schoolwork as group tasks rather than (or in addition to) individual ones (see Slavin, 1983). Frequently, cooperative learning also involves competition between the groups. Like ability grouping, cooperative learning at the elementary level has been found to contribute to higher achievement when compared to whole-class instruction in heterogeneous classes (reviews include Slavin, 1980; Johnson, Johnson, and Maruyama, 1983; and Sharan et al., 1984). Presumably, this outcome occurs along with less inequality of results than that which derives from ability grouping (Slavin, 1977). This question has received less attention, and moreover it is not known whether cooperative learning in heterogeneous classes raises achievement over that produced by homogeneous grouping.

Less research has been done on the effects of cooperative learning at the secondary level. Studies in junior high schools suggest that there, too, cooperative learning is more successful than traditional whole-class instruction at raising achievement

(Newmann and Thompson, 1987). Yet of six studies conducted in grades 10-12, only two showed positive effects (Newmann and Thompson, 1987). Still, given the weak overall performance of ability grouping at the secondary level, and the high degree of resulting inequality, it seems clear that cooperative learning is worth further exploration (Oakes, 1985).

A critical question for cooperative learning at the secondary level is whether it can maintain the high level of achievement among the strongest students that curriculum tracking allows. Another issue is whether it can accommodate the subject matter differentiation that occurs in tracking. Cooperative learning is a classroom-based system, but by the time students begin high school, their skill and knowledge levels may be so disparate that, at least in some subjects, it may not be possible to teach all of them within the curriculum of a single course. In math, for example, it is not clear how cooperative learning would handle a cohort of ninth graders whose level of readiness ranges from arithmetic to geometry.

Conclusions

This chapter presents clear evidence to show that the way classes are organized for instruction has implications for educational equity. The relation is not a simple one, however, because it is not just how students are arranged, but the experiences they have in class that makes a difference. Indeed, a single type of instructional organization--for example, within-class ability grouping--can have different sorts of impacts on equity depending on the quality of instruction provided to the various subgroups.

Ability grouping in particular seems to affect equity. At the elementary school level, it leads to greater inequality of results, but may occur in concert with higher achievement at all ranks. Furthermore, at this level there was no evidence of assignment bias related to students' social or economic characteristics. By contrast, grouping and tracking in secondary schools appear to produce higher achievement in academic tracks but lower achievement in other programs when compared to alternative instructional arrangements. Overall mean achievement is thus roughly similar, but inequality is greatly increased. Moreover the inequality of results is likely linked to inequality of access, in that the quality of instruction in low-track classes appears to suffer. The only equitable aspect of grouping at the secondary schools was the finding that blacks (and in one study, females) were more likely that their counterparts to be assigned to the college track; this made black-white inequality of results smaller than it would have been in the absence of tracking.

The limits and possibilities of ability grouping are not yet known. It seems likely that there are ways of improving the quality of instruction in low groups that would produce more equitable results without sacrificing performance in the high groups. However, improvement of instruction is no simple matter, particularly at the secondary level. Heterogeneous arrangements likewise demand further exploration, but they also provide no guarantee of equitable results unless one is willing to sacrifice achievement at the highest levels.

Educational decision-makers pondering alternative forms of instructional organization are thus confronted with choices between

alternative models and competing goals. Although our knowledge is incomplete, it is possible to describe some tentative conclusions about current practice. In comparison to traditional whole-class instruction in heterogeneous classes, ability grouping produces higher average achievement but more inequality. This finding is particularly problematic at the secondary level because there the inequality of results very likely stems in part from inequality of access to effective instruction. Improvement of the quality of low-track instruction would both raise average achievement and reduce inequality of results, but whether this goal can be accomplished has yet to be demonstrated.

Grouping and tracking are particularly successful at producing high achievement for the strongest students. It is not known whether cooperative learning, another form of organization that produces higher achievement than whole-class instruction, can match ability grouping for the achievement of highly able students. Further, while cooperative learning has clearly been successful in elementary schools, its success at the secondary level is less secure. Yet it is in secondary schools that ability grouping seems to have the most severe consequences for inequality. Future research might evaluate the likelihood of effective instruction in low-track classes along with the prospects for maintaining high achievement for the strongest students with the use of cooperative learning in heterogeneous classes.

NOTES

[1] Bloom (1976, 1987) seems to support this position. His scheme calls for devoting a much greater portion of resources (in the form of teaching time) to the least able students. Likewise, Jencks et al. (1972) appear to hold this view for income inequality.

[2] Although a few critical voices were heard earlier (e.g., Raup, 1936), the criticism did not cumulate until the 1960s.

[3] It is important to emphasize that this claim has been made only for elementary-school ability grouping, and only for certain forms: within class grouping, and regrouping for specified subjects, especially when grade levels are mixed (the "Joplin plan").

[4] The comparison to the "absence of tracking" by Gamoran and Mare (1989) was to a simulated situation in which all students were assigned to a single program, whose effects were either like those of the academic track, or like those of the nonacademic track. The black-white achievement gap turns out to be smaller under current tracking systems than it would be under either of the simulated alternatives.

[5] Japananese elementary education is often touted as an example of undifferentiated instruction that produces high levels of

achievement. Japanese elementary schools have no ability grouping, and their teachers use whole-class instruction. It appears that the steering group used by Japanese teachers is near the top of the class rather than at the bottom. This does appear to produce high achievement, but it also leads to a high degree of inequality of results (at least relative to the level of diversity at the beginning of school). Japanese secondary education is highly stratified between schools, and students differ widely in their skills by the onset of secondary education (Rohlen, 1983). Based on this information, one can speculate that the Japanese system of "teaching to the top" in heterogeneous classes produces higher achievement but more inequality than American heterogeneous classes in which instruction is geared lower.

REFERENCES

Alexander, K. L., and Cook, M. A. (1982). Curricula and coursework: A surprise ending to a familiar story. American Sociological Review, 47, 626-640.

Alexander, K. L., Cook, M. A., and McDill, E. L. (1978). Curriculum tracking and educational stratification. American Sociological Review, 43, 47-66.

Alexander, K. L., and McDill, E. L. (1976). Selection and allocation within schools: Some causes and consequences of curriculum placement. American Sociological Review, 41, 963-980.

Averch, H., Carroll, S. J., Donaldson, T. S., Kiesling, H. J., and Pincus, J. (1972). How effective is schooling? Santa Monica, CA: Rand Corporation.

Ball, S. J. (1981). Beachside Comprehensive: A case-study of secondary schooling. Cambridge: Cambridge University Press.

Bangert, R., Kulik, J., and Kulik, C.-L. (1982). Individual systems of instruction in secondary schools. Review of Educational Research, 53, 143-158.

Barr, R., and Dreeben, R. (1977). Instruction in classrooms. Pp. 89-162 in L. S. Shulman (ed.), Review of Research in Education, Vol. 5. Itasca, IL: Peacock.

Barr, R., and Dreeben, R. (1983). How schools work. Chicago: University of Chicago Press.

Burns, R. B. (1987). Steering groups, leveling effects, and instructional pace. American Journal of Education, 96, 24-55.

Cicourel, A. V., and Kitsuse, J. I. (1963). The educational decision-makers. Indianapolis: The Bobbs Merrill Co.

Coleman, J. S. (1968). The concept of equality of educational opportunity. Harvard Education Review, 38, 7-22.

Coleman, J. S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., and York, R. (1966). Equality of educational opportunity. Washington, DC: U.S. Government Printing Office.

Conant, J. V. (1967). The Comprehensive High School on America. New York: McGraw-Hill.

Coxe, W. W. (1936). Social problems and pupil grouping. Pp. 14-30 in G. M. Whipple (ed.), The Grouping of Pupils. National Society for the Study of Education Yearbook, Vol. 35 part I. Bloomington, IL: Public School Publishing Co.

Dahllof, U. (1971). Ability grouping, content validity, and curriculum process analysis. New York: Teachers College Press.

Dreeben, R. and Gamoran, A. (1986). Race, instruction, and learning. American Sociological Review, 51, 660-669.

Eder, D. (1981). Ability grouping as a self-fulfilling prophecy: A microanalysis of teacher-student interaction. Sociology of Education, 54, 151-161.

Espositio, D. (1973). Homogeneous and heterogeneous ability grouping: principal findings and implications for evaluating and designing more effective educational environments. Review of Educational Research, 43, 163-179.

Findley, W., and Bryan, M. (1971). Ability grouping: 1970. Athens, GA: Center for Educational Improvement.

Finley, M. K. (1984). Teachers and tracking in a comprehensive high school. Sociology of Education, 57, 233-243.

Gamoran, A. (1986). Instructional and institutional effects of ability grouping. Sociology of Education, 59, 185-198.

Gamoran, A. (1987). The stratification of high school learning opportunities. Sociology of Education, 60, 135-155.

Gamoran, A. (1988). A multi-level analysis of the effects of tracking. Paper presented at the annual meetings of the American Sociological Association, Atlanta, GA.

Gamoran, A. (1989). Rank, performance, and mobility in elementary school grouping. Sociological Quarterly, 30, in press.

Gamoran, A., and Berends, M. (1987). The effects of stratification in secondary schools: Synthesis of survey and ethnographic research. Review of Educational Research, 57, 415-435.

Gamoran, A., and Mare, R. D. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement, or neutrality? American Journal of Sociology, 94, in press.

Good, T., and Marshall, S. (1984). Do students learn more in heterogeneous or homogeneous groups? Pp. 15-38 in P. L. Peterson, L. C. Wilkinson, and M. T. Hallinan (eds.), The Social Context of Instruction. Orlando, FL: Academic Press.

Haller, E. J. (1984). Pupil race and elementary school ability grouping: are teachers biased against black children? American Educational Research Journal, 22, 465-483.

Haller, E. J., and Davis, S. (1980). Does socioeconomic status bias the assignment of elementary school students to reading groups? American Educational Research Journal, 17, 409-418.

Hallinan, M. T., and Sørensen, A. B. (1983). The formation and stability of instructional groups. American Sociological Review, 48, 838-851.

Hanushek, E. (1986). The economics of schooling: Production and efficiency in the public schools. Journal of Economic Literature, 24, 1141-1177.

Hiebert, E. H. (1987). The context of instruction and student learning: An examination of Slavin's assumptions. Review of Educational Research, 57, 337-340.

Gutmann, A. (1987). Democratic Education. Princeton, NJ: Princeton University Press.

Hargreaves, D. H. (1967). Social relations in a secondary school. London: C. Tinling and Company Limited.

Heathers, G. (1969). Grouping. Pp.559-570 in R. L. Ebel (ed.), Encyclopedia of Educational Research, Fourth Edition. New York: Macmillan.

Heyns, B. (1974). Social selection and stratification within schools. American Journal of Sociology, 79, 1434-1451.

Jencks, C. L., and Brown, M. (1975). The effects of high schools on their students. Harvard Educational Review, 45, 273-324.

Jencks, C. L., Smith, M., Acland, H, Bane, M. J., Cohen, D., Gintis, H., Heyns, B., and Michaelson, S. (1972). Inequality: A Reassessment of the Effects of Family and Schooling in America. New York: Basic Books.

Johnson, D. W., Johnson, R. T., and Maruyama, G. (1983). Interdependence and interpersonal attraction among heterogeneous and homogeneous individuals: A theoretical formulation and a meta-analysis of the research. Review of Educational Research, 53, 5-54.

Keddie, N. (1971) Classroom knowledge. Pp. 133-160 in M.F.D. Young (ed.), Knowledge and control. London: Collier-Macmillan.

Kerckhoff, A. C. (1986). Effects of ability grouping in British secondary schools. American Sociological Review, 51, 842-858.

Kulik, C.-L., and Kulik, J. (1982). Effects of ability grouping on secondary school students: A meta-analysis of evaluation findings. American Educational Research Journal, 19, 415-428.

Lacey, C. (1970). Hightown Grammar. Manchester: Manchester University Press.

Metz, M. H. (1978). Classrooms and corridors: The crisis of authority in desegregated secondary schools. Berkeley, California: University of California Press.

McKnight, C. C., Crosswhite, F. J., Dossey, J. A., Kifer, E., Swafford, J. O., Travers, K. J., and Cooney, T. J. (1987). The underachieving curriculum: Assessing U.S. School mathematics from an International Perspective. Champaign, IL: Stipes.

Miller, R. (1976). Individualized instruction in mathematics: A review of research. Mathematics Teacher, 69, 345-351.

Moore, D., and Davenport, S. (1989). The new improved sorting machine. Madison, WI: National Center on Effective Secondary Schools.

Newmann, F. M., and Thompson, J. A. (1987). Effects of cooperative learning on achievement in secondary schools. Madison, WI: Wisconsin Center for Education Research.

Nystrand, M., and Gamoran, A. (1988). A study of instruction as discourse. Paper presented at the annual meetings of the American Educational Research Association.

Oakes, J. (1985). Keeping track: How schools structure inequality. New Haven, CT: Yale University Press.

Page, R. N. (1987). Lower-track classes at a college-preparatory school: A caricature of educational encounters. In G. Spindler (ed.), Ethnography of Education at Home and Abroad.

Raup, R. B. (1936). Some philosophical aspects of grouping. Pp. 48-67 in G. M. Whipple (ed.), The Grouping of Pupils. National Society for the Study of Education Yearbook, vol. 35 part I. Bloomington, IL: Public School Publishing Co.

Rehberg, R. A., and Rosenthal, E. R. (1978). Class and merit in the American high school. New York: Longman.

Rist, R. (1970). Student social class and teacher expectations: The self-fulfilling prophecy in ghetto education. Harvard Educational Review, 40, 411-451.

Rohlen, T. P. (1983). Japan's high schools. Berkeley, C: University of California Press.

Rowan, B.; and Miracle, Jr, A. W. (1983). Systems of ability grouping and the stratification of achievement in elementary schools. Sociology of Education 56, 133-144.

Rosenbaum, J. E. (1976). Making inequality. New York: Wiley.

Rosenbaum, J. E. (1980a). Social implications of educational grouping. Pp. 361-401 in L.S. Shulman (ed.), Review of Research in Education, vol. 8. Itasca, IL: Peacock.

Rosenbaum, J. E. (1980b). Track misperceptions and frustrated college plans: An analysis of the effects of tracks and track perceptions in the National Longitudinal Survey. Sociology of Education, 53, 74-88.

Schafer, W. E., and Olexa, C. (1971). Tracking and opportunity. Scranton, PA: Chandler.

Schoen, H. (1976). Self-paced mathematics instruction: How effective has it been? Arithmetic Teacher, 23, 90-96.

Sharan, S., Kussel, P., Hertz-Lazerowitz, R., Bejarano, Y., Raviv, S., and Sharan, Y. (1984). Cooperative learning in the classroom: Research in desegregated schools. Hillsdale, NJ: Erlbaum.

Shavit, Y., and Featherman, D. L. (1988). Schooling, tracking, and teenage intelligence. Sociology of Education, 61, 42-51.

Slavin, R. E. (1977). Student learning team techniques: Narrowing the gap between the races. Report No. 228. Baltimore: Center for the Social Organization of Schools.

Slavin, R. E. (1980). Cooperative learning. Review of Educational Research, 50, 315-342.

Slavin, R. E. (1983). Cooperative learning. New York: Longman.

Slavin, R. E. "Ability Grouping and Student Achievement in Elementary Schools: A Best-Evidence Synthesis." Review of Educational Research 57 (1987): 293-336.

Sørensen, A. B., and Hallinan, M. T. (1984). Race effects on the assignment to ability groups. Pp. 85-103 in P. L. Peterson, L. C. Wilkerson, and M. T. Hallinan (eds.), The Social Context of Instruction. Orlando, FL: Academic Press.

Sørensen, A. B., and Hallinan, M. T. (1986). Effects of ability grouping on growth in academic achievement. American Educational Research Journal, 23, 519-542.

Strike, K. (1988). The ethics of resource allocation. Pp.143-180 in D. H. Monk and J. Underwood (eds.), Microlevel Educational Finance: Issues and Implications for Policy. Yearbook of the American Educational Finance Association. Cambridge, MA: Ballinger.

Vanfossen, B. E., Jones, J. D., and Spade, J. Z. (1987). Curriculum tracking and status maintenance. Sociology of Education, 60, 104-122.

Weinstein, R. S. (1976). Reading group membership in first grade: Teacher behaviors and pupil experience over time. Journal of Educational Psychology 68, 103-116.

Willis, P. L. (1977). Learning to labour: How working class kids get working class jobs. Driffield, England: Nafferton Books.